

TS #165076  
Copy No. 1

SOVIET Delivery Systems ←

ALL CAPS

← ~~SECRET~~ LONG RANGE BOMBER FORCE

~~SECRET~~ In June we completed an intensive re-examination of all evidence pertaining to the development and production of long range bombers in the USSR. As a result, we have made a slight downward revision in our estimate of the number of heavy bombers the USSR would have as of mid-1958 and a very considerable reduction in the numbers of such bombers it would probably have in the next few years.

~~SECRET~~ Soviet Long Range Aviation has increased markedly in size and capabilities since early 1954, when it included about 1,000 BULL (B-29 type) piston medium bombers. We estimate its total mid-1958 strength at more than 1,450 bombers, including about 425 BULLS, about 925 BADGER (B-47 type) jet medium bombers, and about 100 to 125 BISON (B-52 type) jet and BEAR turboprop heavy bombers. Some of the BISONs and BADGERs in this force are equipped as convertible tanker-bombers. These figures clearly show Soviet Long Range Aviation remains primarily a medium bomber force, best suited for operations against targets in Eurasia and its periphery, but capable of large-scale attacks on the continental US through extensive use of one-way missions.

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8. Heavy bomber and tanker strength has fallen somewhat short of our previous estimate of last November. Evidence received since then indicates that Soviet production of heavy bombers has been at a very low and uneven rate. BISON production virtually stopped early this year, but recently some additional production has been reported. We cannot be sure at present whether the current model of the BISON is being phased out of production in favor of an improved version or perhaps a new aircraft, or whether the Soviets intend to continue producing the present model. In retrospect, however, the history of the Soviet heavy bomber program leads us to believe that despite the efforts they devoted to developing the BISON and BEAR, Soviet planners probably decided within the past year or two to forego a rapid buildup with present heavy bomber models.

*may have been reached as a result of anyone or more of the following*

9. This decision ~~was probably affected by~~ several factors; ~~among them possibly:~~ dissatisfaction with the performance of BISON and BEAR; progress in developing new or improved bombers; Soviet confidence in their ability to acquire an ICBM capability at an early date. We believe that prototypes of one or more new or improved bombers have probably been completed, but we do not yet know their characteristics. We estimate, however, that the USSR could begin production of an improved BISON at any time, and could develop a new subsonic heavy bomber for operational use in 1959 or 1960. In either case,

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however, we do not believe the numbers produced would be very large, because Soviet planners probably do not feel compelled, in the interim before the advent of more advanced intercontinental delivery systems, to acquire a heavy bomber force of much larger size but only marginally improved performance.

~~2~~ We therefore project Soviet heavy bomber and tanker strength for mid-1960 as lying within the range of 100 to 200 aircraft. The high side reflects a Soviet option to produce some additional aircraft of BISON and perhaps BEAR types, and to introduce a new subsonic heavy bomber into units. The low side reflects their option to forego any further buildup in heavy bombers through this period, relying primarily on their one-way medium bomber capability against the US for at least a little longer.

(B-47 Tyb)

~~2~~ The jet medium bomber and tanker force will probably increase somewhat, reaching a peak strength of about 1,100 in mid-1960. A new medium bomber with supersonic "dash" capability ~~will probably~~ <sup>may</sup> be introduced some time during 1960-61 as a successor to the BADGER; a few might have reached operational units by mid-1960.

~~2~~ Our estimates of trends in Soviet Long Range Aviation during the 1960-63 period are more uncertain. The Soviets will almost certainly continue to strive for technological superiority over the US in intercontinental weapon systems, and it is clear that they are

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laying great store by the ICBM as posing an entirely new type of threat. But Soviet military planners would probably feel that even though they had available substantial numbers of ICBMs and some submarine-launched missiles, it would still be desirable to introduce some advanced intercontinental <sup>aircraft</sup> ~~bombers~~ -- with emphasis on such functions as attacks on small hardened targets, damage assessment, and reconnaissance. By mid-1963 they could probably have small numbers of such aircraft, including chemical-powered heavy bombers capable of supersonic speed at high altitude or possibly subsonic nuclear-powered aircraft with long endurance at various altitudes.

As already indicated, they might also produce an interim subsonic heavy bomber during the early years of ICBM availability and prior to the advent of more advanced intercontinental bombers -- partly as a "hedge" against slippage in either of the latter programs. Should the Soviets desire a large force of subsonic heavy bombers and tankers (BISONS, BEARs, and new subsonic bombers), there is no question that they could have five or six hundred in units by mid-1963. It seems to us more likely, however, that the Soviet heavy bomber and tanker force will remain smaller than this -- say about two or three hundred -- and that by about mid-1963 the USSR will be placing major reliance on ICBMs for intercontinental delivery of nuclear weapons.

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~~E~~ The number of medium bombers in Soviet Long Range Aviation will probably decrease by mid-1963. Supersonic "dash" medium bombers may become an important element in the force, but BADGERS will probably have continuing utility.

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TS #165076-a

BALLISTIC MISSILES

Since mid-1953, more than 380 ballistic missiles have been flight-tested at Kapustin Yar. Most of these firings have been to distances up to about 650 nautical miles, but over the past year there have been about a dozen firings to approximately 1,000 miles. We estimate that the USSR could now have available for operational use, surface-to-surface ballistic missiles with ranges of 100, 200, 350, 700, and 1,100 nautical miles. The first four of these are probably now operational. The 1,100 mile missile is estimated as a Soviet capability for operational use sometime in 1958 if, as seems likely, this missile is a modification of the 700 mile missile, with lighter warhead. The 1,100 nautical mile missile deployed inside the USSR and/or the 700 nautical mile missile deployed in the Satellites would provide the USSR with nuclear weapons delivery systems capable of reaching the majority of our overseas <sup>European and African</sup> bases. We have, however, no firm evidence of the operational deployment of any of these missiles.

[2. In 1951, a large rocket engine of about 220,000 pounds thrust was being fabricated. This engine could have been static tested in 1952 and ready for incorporation into a missile system and flight testing in 1953. The thrust rating of this engine could have been

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increased by now and the coupling of two or more such engines is within Soviet capabilities, although we have no evidence that either advancement has been accomplished. We believe that two of these engines coupled together provide the first stage booster for Soviet ICBMs and earth satellites. ]

~~2~~ The existence of a 3,500 nautical mile ballistic missile test range has been firmly established. We believe that as many as six ICBM vehicles have been successfully flight-tested on this range and that all three Soviet earth satellites were launched from here. We have good evidence that at least four ICBM firings reached the general impact area.

~~2~~ We believe the USSR is concentrating on the development of an ICBM which, when operational, will probably be capable of carrying a high-yield nuclear warhead to a maximum range of about 5,500 nautical miles, with a CEP of five nautical miles or less at maximum range, and a system reliability of about 50 percent. Recent calculations 25X1X1□ of Soviet ICBM warhead weight carrying capabilities, [REDACTED]

indicate

that the warhead weight capability is probably at least 2,000 pounds, and may be as great as 5,000 pounds. This would mean a multi-megaton yield warhead. This question is currently under priority consideration in the intelligence community.

~~E~~ We estimate that some time during the year 1959, the USSR will probably have a first operational capability with 10 prototype ICBMs, with characteristics approximating those estimated above. We cannot, however, disregard the possibility that the Soviets may establish in the latter part of 1958 a limited ICBM capability with missiles less well proven as to accuracy and reliability. I should like to emphasize, however, that we have no firm evidence of the construction of bases for launching ICBMs or of their deployment.

~~E~~ ICBMs could probably be produced, launching facilities completed, and operational units trained at a rate sufficient to give the USSR an operational capability with 100 ICBMs about one year (1960) after its first operational capability date, and with 500 ICBMs about two or at most three years (1961-62) after first operational capability date. It should be noted that the buildup would occur beginning with first operational capability date; hence, our estimate implies a Soviet capacity to produce and deploy ten or more, but less than 100 ICBMs by the end of 1959.



22 July 1958.

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propaganda  
bombast, caused

By early 1957, the Soviets had apparently become acquainted with the many problems involved in building a number of large nuclear power stations and recognized that their 1960 goals would have to be scaled downward. The Soviet reply in March 1957 to a United Nations questionnaire on electric power listed only three large nuclear power stations, plus the four experimental reactors, giving a total installed capacity of about 1400 megawatts. (See chart) This reply, coupled with Soviet papers presented at the Belgrade World Power Conference, indicated a preference for the early construction of stations employing pressurized water reactors (the type used at Shippingport).

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Recent evidence makes it clear that only one large station, employing two pressurized-water reactors to deliver 420 megawatts, will be completed by the end of 1960. We estimate that a second station using graphite-moderated reactors, will be partially completed with a capacity of 100 megawatts. Assuming completion of the four experimental reactors, a total capacity of about 700 megawatts is indicated. However, recent firm information has revealed that the Soviets by 1960 will obtain at least 200 megawatts of electric power as a by-product of the heat from plutonium production reactors. This practice, successfully pioneered on a large scale by the British, is possibly being followed at other Soviet atomic energy sites. Thus, we estimate that the Soviets will have at least 900 megawatts of installed nuclear-electric power by the end of 1960.

Despite this considerable slow-down in the building of nuclear power stations in the USSR, the Soviets will still probably lead the world in this field by the end of 1960. ~~At this time, the Soviets should have at least 900 megawatts of installed capacity; the U.K., about 800 megawatts (and the U.S., about 400 megawatts).~~

*and*

*if these programs are realized,*

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